

## **FISCAL DECENTRALIZATION AND ECONOMIC GROWTH**

Jorge Martinez-Vazquez<sup>1</sup>

Robert M. McNab

January 2001

### **Abstract**

This paper reviews the current knowledge on an issue of increasing policy interest: what impact fiscal decentralization has on economic growth. Fiscal decentralization may indeed have a direct impact on economic growth but the theoretical underpinnings for this relationship remain largely undeveloped. The absence of an adequate theoretical framework has undermined the validity of the empirical work on this subject. A fair summary of the empirical search for a direct relationship between fiscal decentralization and economic growth is that it remains an open question. Much less attention has been devoted in the literature to the indirect channels through which fiscal decentralization may affect economic growth, through the impact of fiscal decentralization on economic efficiency, the regional distribution of resources, and macroeconomic stability. This paper explores the nature of these links and concludes with some thoughts and policy advice.

JEL Classification Numbers: E62, H77

Keywords: Fiscal Decentralization, Economic Growth

---

<sup>1</sup> Authors' addresses: Jorge Martinez-Vazquez: Economics Department and International Studies Program, Andrew Young School of Policy Studies, Georgia State University, 35 Broad Street, Atlanta, GA 30303, USA (jorgemartinez@gsu.edu). Robert M. McNab: Defense Resources Management Institute and Naval Postgraduate School, 1522 Cunningham Road, Monterey, CA 93943, USA (rmcnab@nps.navy.mil).

## 1. Introduction

This paper reviews the current knowledge in the economics literature on the causal relationship between fiscal decentralization and economic growth, whether this relationship is uni-directional or bi-directional, and to what extent synergies appear to exist between fiscal decentralization, on the one hand, and economic growth, on the other.<sup>2</sup> Over the past decade most developing and transitional countries have either embarked upon or stated their intention to embark upon some type of fiscal decentralization initiative.<sup>3</sup> Often, one of the stated primary policy objectives of fiscal decentralization is to foster economic growth. The interest in fiscal decentralization as an engine for economic growth is not limited to developing and transitional economies, but has also emerged to the forefront of the policy agendas of most OECD countries.<sup>4</sup> These broad-based policy agendas call for a closer examination of the potential relationship between fiscal decentralization and economic growth.

The increased interest in fiscal decentralization has several roots. First, the renewed focus on fiscal decentralization appears to be fueled by the widespread belief that fiscal decentralization is an effective tool for increasing the efficiency of public expenditures, even though it may carry some risks vis-a-vis other desirable objectives for government policy, such as horizontal fiscal imbalances across subnational governments and macro-economic stability.<sup>5</sup>

---

<sup>2</sup> It is not our intention to review here the now vast and still fast growing literature on fiscal decentralization. For reviews of the literature see Rondinelli and Nellis (1986), Rubinfeld (1987), Oates (1990, 1991), Prud'homme (1991), Shah (1994), Bird and Vaillancourt (1997), and Ter-Minasian (1997).

<sup>3</sup> See, for example, Dillinger (1994).

<sup>4</sup> See World Bank (1999).

<sup>5</sup> See, for example, Oates (1972), Bahl and Linn (1992), Guess, Loehr, and Martinez-Vazquez (1997), Spahn (1997), Burki, Perry, and Dillinger (1999), and Shah (1999).

Second, the rush to decentralize can also be seen as a reaction to the failures over the past two decades of large centralized bureaucracies under very different political regimes in developing and transitional countries. Decentralization is also seen as a way to break the central government's grip on the economy by shifting fiscal authority to subnational governments.<sup>6</sup> As Taillant (1994) has put it, the issue in many of these countries has become not "whether to" but "how best to" decentralize.

However, decentralization may actually appear to be more popular among developing and transitional countries than it truly is because there is often a confusion in terminology. What some transitional and developing governments call fiscal decentralization is actually nothing more than the geographical deconcentration of central government bureaucracy and service delivery.<sup>7</sup> Deconcentration can be described as a process geared to increasing the effectiveness and flexibility of the provision of government services by providing previously centralized services through regional and local offices but, other than geographic similarities, deconcentration has little to do with fiscal decentralization. Although there are several ways to describe the process of fiscal decentralization, its essence is captured by the two related processes of either "delegation" or "devolution" of fiscal authority. In either case, decision making power on the composition of expenditures and often on the composition and level of revenues is shifted to separately elected subnational governments.<sup>8</sup>

---

<sup>6</sup> Brennan and Buchanan (1980) is the classical exposition of how fiscal decentralization can control the Leviathan. See Ehdaie (1994) for empirical evidence that decentralization may reduce the size of the public sector.

<sup>7</sup> For example, actual deconcentration efforts in the guise of decentralization is a common process in countries in transition such as the Central Asia republics (Martinez-Vazquez, McLure, and Wallace 1999), Ukraine (Martinez-Vazquez, McLure, and Wallace 1995) or even Vietnam (McLure and Martinez-Vazquez, 1997).

<sup>8</sup> See Bird (1993), Bird and Vaillancourt (1997), and Martinez-Vazquez and McNab (1998) for a discussion of the difference between delegation, devolution, and deconcentration of fiscal authority.

While there has been a myriad of policy discussions on the application and influence of fiscal decentralization, in contrast, there has been limited empirical work quantifying the effects of fiscal decentralization. The lack of empirical research is surprising given that economic efficiency is the central argument for fiscal decentralization and that the potential negative impacts of fiscal decentralization on the distribution of resources across subnational jurisdictions and macroeconomic stability are the central arguments against fiscal decentralization.<sup>9</sup> Curiously, most of the recent empirical work has focused more on the direct impact of fiscal decentralization on economic growth, which has not been among the more conventionally addressed effects of decentralization.<sup>10</sup> The focus on the direct impact of fiscal decentralization on economic growth is also surprising because there has been little effort to define the theoretical links between the immediate effects of decentralization (economic efficiency, disparity in the distribution of public resources among subnational governments, and macroeconomic stability) and economic growth. The failure of the empirical work thus far to provide a conclusive answer to what the overall impact of fiscal decentralization on economic growth is may be due in part to the lack of understanding of how fiscal decentralization relates directly and, more importantly, indirectly to economic growth.

The unfinished agenda in the theory and practice of fiscal decentralization is to understand how fiscal decentralization affects the traditional economic objectives of economic

---

<sup>9</sup> Several recent studies examine the relationship between fiscal decentralization and other policy objectives. These include: Grote and von Braun (2000), who investigate whether decentralization reduces poverty; Treisman (2000) who examines the relationship between decentralization and the quality of government; and de Melo (2000) who studies the relationship between fiscal decentralization and intergovernmental fiscal relations.

<sup>10</sup> The list of recent empirical investigations focusing on the direct relationship between fiscal decentralization and economic growth includes: Zhang and Zou (1997, 1998), Davoodi and Zou (1998), Woller and Phillips (1998), and Lin and Liu (2000).

efficiency, horizontal fiscal equality, and macroeconomic stability; and how these may, in turn, affect economic growth. Understanding these linkages, and quantifying any potential tradeoffs associated with them, should help produce more informed policies for fiscal decentralization in developing and transitional economies. As we discuss in this paper, the debate over fiscal decentralization in developing and transitional economies has, for the most part, focused on intuition, case studies, and evidence from individual country studies of developed economies. While these approaches are not wrong and, in many ways, have been invaluable to understanding the role played by each country's history and institutions, panel-based (cross-country, time-series) studies can also provide important insights on the likely economic effects of fiscal decentralization.

The rest of the paper is organized as follows. First, we review the traditional lack of attention to economic growth in the fiscal decentralization literature. Second, we present the empirical findings to date regarding the potential relationship between fiscal decentralization and economic growth. Third, we discuss the possible theoretical linkages between fiscal decentralization and growth and outline an empirical methodology for testing these potential linkages. The last subsection sums up and reviews the policy implications from our current knowledge of the issues.

## **2. Economic growth has not been a traditional concern in the theory of fiscal decentralization.**

Traditionally, the theory and practice of fiscal decentralization has given little attention to the objective of economic growth. Only quite recently have normative discussions of fiscal decentralization added economic growth to the traditional list of public finance objectives of

efficiency in the allocation of resources, horizontal fiscal imbalances, and economic stabilization.<sup>11</sup>

Instead the traditional argument for fiscal decentralization is that it may provide greater economic efficiency in the allocation of resources in the public sector.<sup>12</sup> Under the assumption that public officials respond to the desires of their constituents, subnational governments are better able to match differing preferences across jurisdictions. Gains in efficiency are enhanced if taxpayers are mobile because they can migrate or sort themselves out among the jurisdictions that best match their preferred tax-expenditure package, as first discussed by Tiebout (1956).<sup>13</sup> In short, if preferences for public goods differ across regions or individuals, the level of welfare achieved through a uniform provision of public goods by a central government is inferior to that which can be attained by a decentralized provision which allows for differences across jurisdictions.<sup>14</sup>

Efficiency is one of the three objectives, the other two being income redistribution and macroeconomic stability, initially stated by Musgrave (1959) and widely accepted as guides to government policy. But if decentralized governments can play an important role in efficiency, there is some agreement that the objectives of income redistribution and macroeconomic

---

<sup>11</sup> See, for example, Bird and Vaillancourt (1997). The lack of preoccupation with economic growth in the fiscal decentralization literature is evidenced by the fact that there is no discussion of this objective in textbooks on the subject; for example, Fisher (1993).

<sup>12</sup> See, for example, Oates (1972) and Boadway and Wildasin (1984).

<sup>13</sup> Using Hirshman's terminology, Oates (1993) describes the two systems for conveying preferences for public goods to local government officials through "voice" (voting elections and responsiveness to the local electorate) and "exit" (fiscal mobility or taxpayers voting with their feet by moving across jurisdictions).

<sup>14</sup> A number of researchers have questioned whether developing and transitional countries have the preference revelation mechanisms (voting and geographical mobility) or the institutional capacity to realize the full gains resulting from fiscal decentralization. See Bahl and Nath (1986), Conyers (1990), Prud'homme (1991, 1995), Tanzi (1996, 2000), Litvack, Ahmad, and Bird (1998), and Dethier (1999, 2000).

stability may be better pursued by the central or federal governments.<sup>15</sup> Even though subnational governments may differ in their preferences for income redistribution, the mobility of households and businesses will tend to make differences in redistributive policies self-defeating because the rich would move out of and the poor would move into the jurisdiction.<sup>16</sup> Attempts to implement macroeconomic stabilization by subnational governments are also believed to be ineffective because of the considerable economic “leakages” associated with local expenditures.<sup>17</sup>

Overall, the lack of direct concern with the objective of economic growth in the theory and practice of fiscal decentralization has its roots in the lack of attention given to this objective in public sector economics. However, public sector economics has paid indirect attention to the objective of economic growth by focusing on issues such as how taxation may distort economic incentives toward savings and investment, how to evaluate the relative worthiness of public investment projects (as for example in the theory of cost-benefit analysis), or how to improve the performance of private markets through spending on education and health systems or investments in basic infrastructure. The general implicit assumption in public sector economics has been that economic growth is fueled by the growth in the quantity and quality of economic inputs (labor, capital, and natural resources) and by technological change in the private sector. The role of the public sector is to facilitate, or not to impede, this process.

---

<sup>15</sup> See, for example, Prud’homme (1995) and Tanzi (1996, 2000). But see McLure (1995), Sewell (1996), Spahn (1997), and Shah (1999) for a dissenting point of view.

<sup>16</sup> However, in practice, subnational governments do engage in redistribution policies. See, for example, Bahl, Martinez-Vazquez and Wallace (1996).

<sup>17</sup> Macroeconomic stability in decentralized systems may be more easily attained if shocks to the economy are not symmetrically distributed (Gramlich 1993 and Spahn 1997) or if decentralization results in a more transparent assignment of responsibilities across levels of government (Shah 1999).

### 3. What do we know about the effect of decentralization on economic growth?

A significant feature of the current state of the fiscal decentralization literature is the paucity of empirical information regarding the effects of decentralization, not only on economic growth, but also on the traditional objectives of economic efficiency, income redistribution, and macroeconomic stability. As we discuss below, the analysis of the direct role of the public sector in economic growth is a relatively new area of study, with the contribution of fiscal decentralization to economic growth only emerging in the last decade. In the following paragraphs we discuss the existing empirical evidence on the potential relationship between fiscal decentralization and growth.

From economic growth to fiscal decentralization: Even though there has been little research on the causation line from decentralization to growth, interestingly, there has been extensive empirical analysis of the reverse question: to what extent is the level of decentralization a function of the level of economic development? It is well documented that most measures of fiscal decentralization across countries, such as share of expenditures or revenues of subnational governments in the general government budget, are positively correlated with the level of economic development, generally measured by per capita income.<sup>18</sup> There is less agreement in the literature about how to interpret the fact that decentralization is a more common and deeper phenomenon in industrialized countries. One possible explanation is that decentralization is like a superior good. It is only at relatively high levels of per capita income that decentralization is demanded or becomes “attractive” to taxpayers in the sense that its benefits can be more fully exploited without the problems or disadvantages that tend to be more

---

<sup>18</sup> See Oates (1972), Pommerehne (1977), Kee (1977), Bahl and Nath (1986), Wasylenko (1987), and Panizza (1998). This type of study has been criticized for performing inter-country comparisons using aggregate measures of fiscal decentralization, such as the share of subnational government in overall expenditure or revenues of the general government (Bird 1986).



present in countries at lower levels of development (Bahl and Linn, 1992). This correlation between economic development and the depth of decentralization may also be due to the fact that many developing countries inherited highly centralized systems at the time of their independence from their colonial powers.<sup>19</sup> However, there appears to be wide agreement with Oates' (1993) assessment that the empirical correlation between the level of development and the presence of fiscal decentralization should not be interpreted to say that there is a monotonic relationship between the two such that decentralization intensifies without bound with per capita income,<sup>20</sup> or that a decentralized system of public finances will not offer advantages to countries at lower levels of economic development.<sup>21</sup>

*From fiscal decentralization to economic growth:* While several recent studies have attempted to quantify the role of government expenditures on economic growth, the question of what impact decentralized government expenditures have on economic growth remains largely unaddressed. Aschauer (1989) and Barro (1990) find that an increasing share of central government consumption in GDP is negatively associated with growth in per capita income. In an earlier study, Ram (1986) found a positive relationship between central government consumption in GDP and growth in per capita income. Devarajan, Swaroop, and Zou (1996) examine the impact of the composition of public expenditures on economic growth and find that while an increase in the share of current central government expenditure has a positive and

---

<sup>19</sup> Conyers' (1990) conjecture would suggest that, other things equal, the level of decentralization across developing countries should vary directly with the time period they have been independent and with some proxy of how centralized the colonial administration systems were. These control variables have not been introduced so far in the empirical literature.

<sup>20</sup> The ups and downs of the extent of decentralization in the United States (Wallis and Oates, 1988 and Shannon, 1997) are clear witnesses that no such monotonic relationship does exist.

<sup>21</sup> Other variables that have been found to be positively related to the level of decentralization across countries include: population size (Oates, 1972; Pommerehne, 1977; Bahl and Nath, 1986); a federalist constitution (Oates, 1972; Kee, 1977; Bahl and Nath, 1986; and Wasylenko, 1987); more urbanized population (Kee, 1977 and Bahl and Nath, 1986); less open economies (Kee, 1977 and Wasylenko, 1987); more equal distribution of income (Pommerehne, 1977); greater geographical sectionalism (Oates, 1972), and greater ethnic fractionalization (Panizza, 1998).

statistically significant effect on growth, the capital component of public expenditure has a negative impact on per capita growth. They conjecture that developing country governments may have been allocating too many resources to capital investments at the cost of more productive current expenditures. On the other hand, other researchers have found that public infrastructure spending has a positive significant impact on growth (Aschauer, 1989 and Easterly and Rebelo, 1993). There is also some evidence that the efficiency of public expenditures can differ considerably across countries. Gupta, Honjo, and Verhoeven (1997) assess the efficiency of government expenditures on education and health in 38 countries in Africa and find that, on average, countries in Africa are less efficient than countries in Asia and the Western Hemisphere. They do suggest that the observed inefficiencies may be a result of relatively high government wages and the intra-sectoral allocation of government resources.

None of the studies above is concerned with the potential impact of the degree of decentralization (or intergovernmental composition of public expenditure or revenue assignment) on economic growth. An emerging line of research has attempted to test the presence of a direct link between fiscal decentralization and economic growth with mixed results. Zhang and Zou (1997) find that different measures of fiscal decentralization seem to have a positive and sometimes significant effect on regional economic growth in India. Lin and Liu (2000) conclude that fiscal decentralization positively and significantly influences economic growth in China. This contrasts with the opposite general finding that fiscal decentralization is associated with slower growth for the case of China by Zhang and Zou (1998), for the United States by Davoodi, Xie, and Zou (1995), and for a full sample of both developing and developed countries by Davoodi and Zou (1998). However, Woller and Phillips (1998) fail to find a

statistically significant and robust relationship between fiscal decentralization and economic growth for a panel of developing countries.<sup>22</sup>

Although the theoretical underpinnings of this literature still need to be further developed, as discussed below, these studies have not only provided the first empirical estimates of the potential effect of decentralization on economic growth but have also provided insights into different aspects of this relationship. For example, if fiscal decentralization could be measured, as is done in this literature, in a single dimension (for example the share of expenditures or revenues of subnational governments in the general government) then we should not expect a monotonic relationship between decentralization and growth (Davoodi and Zou, 1998). That is, it is not necessarily true that the more decentralized a country's fiscal system becomes, the faster its economy will grow, but rather, we should expect that there exists an optimal degree of fiscal decentralization which is less than full decentralization (subnational governments' share of expenditures (revenues) is 100 percent). Of course, the bounds are imposed by the fact that there are some public goods, those with nation-wide benefits, that can be more efficiently provided at the national level. However, within the context of more complex, multi-dimensional definitions of decentralization (for example, an index encompassing tax autonomy and budgetary discretion), it may be possible to obtain multiple optima, and even a monotonic relationship between decentralization and economic growth. The recent literature on the empirical relationship between decentralization and growth also raises several estimation issues for future work, which we address next.

---

<sup>22</sup> These studies use different levels of disaggregation of expenditures and revenues at different levels of government. For example, Davoodi, Xie and Zou (1995), Davoodi and Zou (1998), and Woller and Phillips (1998) concentrate on the role of aggregate spending of different levels of government while Zhang and Zou (1997, 1998) carry this analysis further by looking at the impact of the sectoral composition of public expenditures at different levels of government on economic growth. Lin and Liu (2000) use the marginal revenue retention rate as a measure of fiscal decentralization.

Empirical issues in the estimation of a relationship: Several estimation issues will need to be addressed in the future to strengthen our confidence in the empirical results on the role of fiscal decentralization in economic growth. First, there is the issue of *possible misspecification* of the empirical estimation models. The literature on economic growth suggests that long-term growth may be a function of many variables such as economic freedom and basic legal structure, savings rates, investment behavior, and general capital accumulation, human capital, technological development and change, and so on. Excluding some of the necessary control variables across countries or over time may result in omitted variable bias leading to the false conclusion that a statistically significant relationship exists between growth and fiscal decentralization. In short, there is a need to verify that the estimated relationships between decentralization and growth are robust under alternative specifications of the estimation model. Levine and Renelt (1992) note the general lack of robustness in the empirical growth literature that has tried to identify the impact of diverse government policies on growth. Using cross-country time series data, they conclude that the significant correlation between measures of economic policy and economic growth found in many previous studies are fragile. In particular, they find that the statistical significance for those economic policy variables is lost by the inclusion of other explanatory variables in the estimation equation. This is the fate of a wide array of fiscal-expenditure variables, monetary policy indicators, and political stability indices. The only robust correlations they find are for the share of investment in GDP and for the share of international trade in GDP and economic growth. To date, the majority of the studies directly linking fiscal decentralization and economic growth employ Barro's (1990) endogenous growth model, where the production function for the economy has multiple inputs including private capital and multiple public spending by the three levels of government.<sup>23</sup> While Davoodi and

---

<sup>23</sup> Recently, Lin and Liu (2000) follow Mankiw, Romer, and Weil (1992) and specify a Solow (1956) model of economic growth that assumes decreasing returns to all forms of reproducible capital.

Zou (1998) use the Levine-Renelt conditioning variables (investment, population growth, human capital) to test the fragility of the estimate for fiscal decentralization, they do not control for the impact of the external sector.<sup>24</sup> Many of the other studies of the relationship between fiscal decentralization and economic growth also fail to properly condition their estimates.

Second, the *measurement of fiscal decentralization* used by the majority of empirical studies as an explanatory variable is, at least, problematic. The issue is that there is no single or best measure of decentralization. The empirical literature has evolved significantly in the precision with which the explanatory variable for fiscal decentralization is measured. Initially public expenditures were disaggregated into recurrent or consumption and capital expenditures, later into different levels of government, and finally into types of expenditures by sector at different levels of government. However, all these measures of fiscal decentralization are defined on the basis of a single dimension of decentralization, expenditures going through the subnational budgets or revenues raised by subnational governments. We are sure to misrepresent decentralization when we use a single dimension, no matter how detailed or disaggregated. Clearly, fiscal decentralization is multidimensional. There are many aspects of a country's fiscal affairs that can be more or less decentralized.<sup>25</sup> Even if one country has a greater share for subnational governments in general expenditures or tax revenues, it can be the case that a second country may be more decentralized overall because its subnational governments have more significant autonomous sources of revenue or discretion over tax rates, or greater freedom in how to make expenditure decisions on education, health or other services provided at the subnational level. Even worse, a country may have a high share of general government

---

<sup>24</sup> Feder (1992) and McNab and Moore (1998) show that increases in exports are significantly and robustly associated with economic growth. This may be an important omission especially for developing and transitional countries, where external trade plays a critical role.

<sup>25</sup> See Guess, Loehr, and Martinez-Vazquez (1997).

expenditures going through subnational budgets, but *de facto* the level of decentralization may be small because regional and/or local officials are not democratically elected and are only accountable to central government authorities. It would be desirable in future empirical research to attempt to capture the multidimensionality of fiscal decentralization in estimating the impact of fiscal decentralization on economic growth. A possible point of departure could come from quantifying the minimum conditions for effective fiscal decentralization such as discretion in the margin to raise own revenues or the use of democratic elections, as suggested in the literature.<sup>26</sup>

Third, given that our understanding of how decentralization may affect growth is not well developed, there is a danger of accepting too willingly the product of *spurious correlations*. This is a difficult problem to control, but a serious one given that decentralization and growth are broad concepts which themselves are correlated with many other variables. Consider the following: Mauro (1995, 1996) finds that corruption lowers investment, thereby lowering economic growth. But Mauro also finds that corruption is highly correlated with ethnolinguistic fractionalization (which measures the probability that two persons drawn at random in the country will not belong to the same ethnolinguistic group).<sup>27</sup> In general, we should expect decentralization to be highly correlated with ethnolinguistic fractionalization because the tensions associated with diversity in population are often addressed through more decentralization. In these circumstances it would not be the case that decentralization slows growth, but that there may be more corruption with fractionalization and, therefore, less growth. The problem of spurious correlation can only be controlled with better data and careful specification of the estimating equations.

---

<sup>26</sup> See, for example, Bird (1986).

<sup>27</sup> Mauro (1995, 1996) conjectures that more fractionalization may lead to more corruption because bureaucrats may favor members of their same group. Shleifer and Vishny (1993) also suggest that more heterogeneous societies may be subject to more corruption than homogeneous societies.

#### **4. Theoretical linkages between fiscal decentralization and economic growth: What should we be testing?**

The review of the empirical literature shows clearly that we may be far from understanding and therefore properly testing the relationship between decentralization and economic growth. The empirical work on the potential impact of fiscal decentralization on economic growth has offered thus far little detailed discussion of why we should expect this relationship to exist. Answering this basic question should allow us to construct better and more discerning empirical tests. The lack of a theoretical framework has also hampered the statistical work. There is also wide agreement on the desirability of developing such a theoretical framework.<sup>28</sup> In this section we examine in some detail the avenues through which fiscal decentralization may affect economic growth. This may provide the basis for the development of a theoretical framework in the future.

*Is there a direct linkage?* The first question is whether we can expect a direct linkage to exist between decentralization and growth. Oates (1993) argues that, intuitively, the static proposition that fiscal decentralization enhances economic efficiency should have a parallel in the dynamic setting of economic growth. Thus, expenditures for infrastructure and the social sector that respond to regional or local differences are likely to be more effective in enhancing economic development than central policies which may ignore those differences.<sup>29</sup> However, Oates is not very explicit about what this means. The basic question is why, for example, \$1 million spent on roads or education at the subnational level should be more growth-enhancing than the same amount of money spent at the national level. The direct effect, pointed out by

---

<sup>28</sup> See, for example, Oates (1993), Bird (1993), Prud'homme (1995), and Peterson (1996).

<sup>29</sup> Of course, the direct linkage between decentralization and growth can be derailed if fiscal decentralization does not function effectively. The same is true for the greater efficiency of decentralization in a static sense. Oates (1993) and others have questioned whether or not voting mechanisms, mobility, or competition, for example, function well enough in developing and transitional economies to allow the realization of efficiency gains associated with decentralization.

Oates, indicates that if subnational governments have an advantage in making public expenditures more efficient (by better satisfying the needs and preferences of local taxpayers based on better knowledge of these preferences), then this “static” advantage can also be present in a “dynamic” sense by having subnational government expenditures be more growth enhancing. On closer look, this argument would seem to need further development.

Indirect linkages between fiscal decentralization and economic growth: Even if there is no direct linkage between fiscal decentralization and growth derived from Oates’ (1993) argument, there would appear to be several potential indirect linkages between fiscal decentralization and economic growth.

(a) *The nature of efficiency and its measurement:* What is well accepted in the theory and practice of fiscal decentralization is that, given certain conditions, subnational governments can be more efficient. This can mean two things. First, the same amount of funds spent at the subnational level rather than at the national level can result in increased individual welfare. This can be true for some services since local and regional governments are better at discerning the preferences and needs of their constituencies and can more easily adapt their expenditure policies to fulfill them. This increase in welfare through decentralized expenditures can be termed the greater “*consumer or allocative efficiency*” of decentralized expenditures.

Second, it is also possible, but by no means a foregone conclusion, that spending the funds through subnational governments can lead to greater “*producer efficiency*.” That is, the same services or infrastructure can be put in place at a lower cost, or a particular budget can yield larger quantities or better quality of services and infrastructure when the funds are spent at the subnational level.

In general, there would be little dispute with the contention that fiscal decentralization can result in greater *consumer efficiency*. The lack of disagreement is not because there have



been measurements of these effects. In fact, tests of this nature have been few and far between.<sup>30</sup> This is because of the *a priori* belief that a decentralized system can be more responsive to differences in demands among taxpayers and to their basic needs. It can be argued that differences in preferences are not likely to be that important in developing and transitional economies (Prud'homme, 1995) but, in fact, subnational governments can be more efficient than the central government even if all individuals have identical preferences or if they lack mobility. Central governments may have a greater tendency to spend funds, for example, on national defense when the priorities of taxpayers may be better reflected, for example, by greater expenditures on education and sanitation.

The assertion that fiscal decentralization can result in greater *producer efficiency* would be disputed by many. What kind of evidence is there on differences in producer efficiency? The question put forward by Prud'homme (1995), Tanzi (1996), and others is whether or not local governments operate on the same production frontier as the central government and whether or not this question would receive the same answer in developed and developing and transitional economies.<sup>31</sup> On the other hand, Shah (1999) argues that the institutional environment in developing countries necessitates a greater degree of decentralization because of the high transaction and administrative costs implied by centralized systems. In addition, decentralization may lead to greater producer efficiency in that it fosters experimentation and

---

<sup>30</sup> The public finance literature has concentrated on testing how well local budgets may satisfy the demand for public services from representative taxpayers based on statistical tests and surveys. There are no quantitative studies comparing the relative (consumer) efficiency of decentralized versus centralized fiscal systems.

<sup>31</sup> Prud'homme (1995) argues that there are reasons, such as better paying jobs and career prospects, to believe that central government bureaucracies are likely to operate closer to the technical production frontier, even though both central and local bureaucracies probably operate quite far from this frontier. For dissenting views see Sewell (1996), who argues that well-functioning subnational bureaucracies exist in many countries and Bardhan (1997) who notes that putting decision-making authority in the hands of those who have information on local tastes and preferences provides strong incentives for the more efficient provision of local public goods.

innovation in the provision of goods and services.<sup>32</sup> In practice, subnational governments in many countries have been in the vanguard of privatization of public services (World Bank, 1999). But on the whole, there is little empirical evidence one way or another about whether local governments are more or less producer efficient than central governments.

For the sake of argument, let us assume that at least in some cases decentralization leads to greater consumer and producer efficiency. It is very significant that neither of these two potential effects of decentralization, greater consumer efficiency and greater producer efficiency, are recorded in the national income accounts. Greater consumer efficiency translates into greater individual welfare but no independent measures of this exist. Public expenditures with different levels of consumer efficiency are identically recorded in the income accounts: by the level of expenditures at the national or subnational level. Similarly, equal expenditure programs with very different levels of producer efficiency will provide the same reading in the national income and product accounts.<sup>33</sup> If the greater efficiency associated with fiscal decentralization is not directly accounted for in the conventional measures of output and economic growth, how is it that greater efficiency may affect measured growth?

*(b) What is the nature of the linkage between greater efficiency and measured economic growth?* If fiscal decentralization leads to greater producer efficiency, then the indirect link

---

<sup>32</sup> Gramlich (1987) and Salmon (1987) are among those who argue that decentralization results in increased competition among subnational governments and fosters innovation in the provision of public goods. See Strumph (1999) for a dissenting view to this line of reasoning.

<sup>33</sup> Somewhat ironically, the regressions of measures of fiscal decentralization on growth are viewed in the recent empirical literature as a test of the “efficiency proposition” of fiscal decentralization. See, for example, Davoodi and Zou (1998) and Zhang and Zou (1997, 1998). The truth, however, is that the efficiency gains associated with decentralization are not captured in measures of economic growth. The theoretical approach in this literature is also inadequate especially if there is a desire to put emphasis on the efficiency gains associated with decentralization. Typically, this literature assumes the presence of a simple representative agent with utility as a function of private consumption, and government expenditures at all levels of government. Consequently, this type of theoretical framework omits by force the consideration of consumer efficiency gains associated with decentralization which require the presence of several agents with different preferences or tastes for public goods. There is no attempt in this literature either to try to capture any differences in “producer efficiency”. A dollar of expenditure in these models produces the same level of public good at all levels of government.

between fiscal decentralization and growth is somewhat intuitive. National accounts measure public output by the level of expenditures, regardless of which level of government spends the funds. But if decentralized governments can produce more output (or better quality output) than the central government, with the same level of expenditures, then greater producer efficiency at the subnational level is occurring. Eventually the higher quantity or quality of the locally-provided public services, the true output, would result in increased income and, therefore, in measured growth.

In the case of consumer efficiency, the relationship is less intuitive. Several complex elements are at play. On the positive side, by better matching the preferences of citizens and increasing their individual welfare, there may be secondary effects on work effort, savings, and private investment, all of which would have a positive impact on measured economic growth at a later date. It is also possible that if public resources are “more efficiently spent” at the subnational level, this would mean, for example, that a better educated and healthier labor force or faster, less costly, transportation will result in greater (measured) economic growth in the future.

In this sense, tighter empirical tests of the impact of decentralization on economic growth should focus on whether or not fiscal decentralization, other things being equal (such as expenditure levels, per capita income, and so on), results in improved test scores or other measures of education, or better health status indices.<sup>34</sup> This means that we should test for the presence of direct impacts of fiscal decentralization on the basic components of the growth equation (better quantity and quality of inputs) rather than just directly on economic growth per se. However, the intermediate effect of decentralization on the quantity or quality of some

---

<sup>34</sup> See Diamond (1990) for a discussion of the measurement and estimation of the efficiency of public services.

public services, such as roads built by subnational governments, is likely to be more difficult to quantify.

On the negative side, it is conceivable that the mix of recurrent and capital expenditures and the sectoral composition of these expenditures (into roads, education, parks, and so on) that maximize the welfare of local residents may not be the mix that maximizes *measured* economic growth over time. The issue is whether or not there are other mixes of public expenditures that will have a greater positive impact on measured economic growth and whether some of these mixes may be more easily achieved through a centralized system of public finances. The underlying premise of socialist planned economies and central management and planning in many market economies in past decades was that centralized systems were superior in this respect. The poor performance of centralized systems has put into question their alleged superiority.<sup>35</sup> However, in general, there is no reason to expect that the allocation of resources that maximizes voters' welfare through a fiscally decentralized and a democratically representative process is the one that maximizes growth of measured output. In practical terms this means that it would be empirically possible to find that decentralization and measured economic growth are not positively correlated.

*(c) Other indirect effects on growth through decentralization:* The theory of design of fiscal decentralization emphasizes a number of tradeoffs between efficiency and other objectives such as balanced distribution of resources across regions or macroeconomic stability (Guess, Loehr, and Martinez-Vazquez, 1997). The issue is whether or not changes in income distribution

---

<sup>35</sup> See, for example, Rondinelli and Nellis (1986).

and in macroeconomic stability resulting from fiscal decentralization will also have an indirect but measurable impact on economic growth.<sup>36</sup>

Empirically, estimating the indirect impact of fiscal decentralization through horizontal fiscal imbalances and macroeconomic stability will require two sets of estimations. First, is fiscal decentralization actually associated with, or does it result in, a more unequal distribution of resources across regions and a more unstable macroeconomic environment? Second, what are the quantitative tradeoffs between macroeconomic stability (assuming that it comes from decentralization) and economic growth? That is, how much does macroeconomic instability retard economic growth? And, how much does the unequal distribution of income across regions affect the rate of economic growth? Let us take first the issue of macroeconomic stability. There is considerable controversy in the fiscal decentralization literature as to whether or not fiscal decentralization works against macroeconomic stability. As pointed out above, Prud'homme (1995) and Tanzi (1996) are among those that have issued warnings on these negative potential effects of decentralization but McLure (1995), Sewell (1996), and Spahn (1997), among others, have questioned the validity of this link. So far, there has been no empirical test of the link between decentralization and macroeconomic stability.<sup>37</sup> But even if there is no inexorable link between fiscal decentralization and macroeconomic instability, there is wide consensus that poorly designed systems (for example, allowing subnational governments to borrow without controls with central governments covering any defaults) lead to instability. In these cases, fiscal decentralization could lead to less growth because there is some evidence that

---

<sup>36</sup> See Shah (1999) for a review of the literature on the relationship between fiscal decentralization and macroeconomic stability. Little cross-country research has been undertaken on the relationship between fiscal decentralization and horizontal fiscal imbalances across subnational governments.

<sup>37</sup> Burki, Perry, and Dillinger (1999), using a panel data set of 32 countries, found that there is an almost 1-to-1 correspondence between increases in subnational deficits and central government expenditures and deficits in the subsequent period. They failed, however, to examine whether this translated into greater macroeconomic instability.

macroeconomic instability retards growth (Fischer, 1993). But curiously, what most researchers point to as an example of decentralization gone awry, the crises in Argentina and Brazil during the late 1980s and early 1990s, may not be attributable, at least entirely, to decentralization policies. Easterly (2000) finds that, in general, economic and fiscal policies improved during this period for the countries in this region and that economic shocks, not poor policies, were to blame for the debt crises and recessions of this period.

Let us now take on the issue of the distribution of public resources across subnational governments. The first issue is whether or not decentralization causes a more unequal distribution of public resources. Again, there has been no empirical test of this proposition. However, *a priori*, there may be some agreement with Prud'homme's (1995) argument that, all else being equal, unfettered fiscal decentralization is likely to lead to a concentration of resources in a few geographical locations and thus increase fiscal disparities across subnational governments. The accompanying presumption is that more centralized public sectors will attempt to produce a geographically more balanced distribution by channeling resources from richer areas to poorer ones. Conversely, centralized systems could create inequitable distributions of public resources by favoring politically important jurisdictions over jurisdictions with greater needs but of less political importance.<sup>38</sup> But again, neither of these two propositions, that unfettered decentralization leads to the geographical concentration of resources and that centralized public sectors yield more geographically balanced distributions, has been empirically tested. There is also little evidence regarding how inequality across regions affects long-term economic growth.<sup>39</sup> This is another area that awaits testing.

---

<sup>38</sup> See Bird and Rodriguez (1999) for the case of the Philippines.

<sup>39</sup> We do not understand well either how growth may affect regional disparities. Prud'homme (1995) cites a number of studies showing that regional disparities do not disappear with economic development. On the other hand, there is evidence of a substantial narrowing of regional income differentials in the long run in the United States (See Barro and Sala-i-Martin, 1992).

A different issue is how the distribution of resources among subnational jurisdictions actually affects economic growth. Economists have given considerable attention to understanding the links between income distribution and economic growth. However, this research has concentrated on income inequality across the population and not with income disparities across regions. Whether or not lower levels of income inequality across the population translate into increased economic growth is still a matter of debate, with more recent studies suggesting that increased inequality retards economic growth.<sup>40</sup> However, while the findings of these studies suggest that policies to reduce inequality will positively influence economic growth, caution must be used when interpreting these results. Significant problems do exist when attempting to compare income inequality across countries and across time. First, two different measures of inequality are typically used in the analysis: those measures based upon income distribution and those measures based on the distribution of consumption. For the class of countries with income-based measures of inequality, differences exist between those countries that measure inequality on the basis of gross income versus those that measure inequality on the basis of net income. Finally, while some countries use the household as the unit of measurement, other countries measure inequality using the individual as the unit of measurement.<sup>41</sup>

*(d) Subnational government competition and economic development.* A quite different perspective on the impact of fiscal decentralization on economic growth is that fiscal decentralization for better or worse can provide subnational officials with the ability to actively

---

<sup>40</sup> See Persson and Tabellini (1994), Birdsall et al. (1996), Deininger and Squire (1996), Perotti (1996), and Forbes (2000). Barro (1999) offers a dissenting view by noting that the previous studies failed to condition the results for the fertility rate, and once one does so, the coefficient on income inequality is statistically insignificant.

<sup>41</sup> See Deininger and Squire (1996), Dollar and Kraay (2000), and Srinivasan (2000) for further discussion of the measurement issues associated with income inequality.

pursue economic development policies. Often, subnational governments' development policies include several forms of competition among regional and local governments. These may include granting tax privileges and offering other forms of assistance to businesses willing to locate in a particular jurisdiction. This is an issue surrounded by considerable controversy in North America and in Western Europe.<sup>42</sup> Less research and discussion has been addressed to these issues in developing and transitional countries, but it would appear that similar policies are at play there as well. At stake is whether interjurisdictional competition can actually help promote economic growth in a country or whether it is actually a zero-sum or even a negative-sum game among local and regional governments for a fixed set of resources or economic activity. On the positive side, there is the possibility that interjurisdictional competition (of whatever form) forces government officials to deliver services at minimum feasible cost, thus enhancing producer efficiency at the subnational level. The lack of competition at the central government level may mean that costs of public services are higher than they ought to be. On the negative side, competition may lead subnational governments to underprovide public services and basic infrastructure (Break, 1967; Strumph, 1999). This, of course, would retard growth.

*(e) Corruption, capture, and fiscal decentralization:* Does fiscal decentralization result in increased corruption or the capture of local governments, and, if so, how does it affect economic growth? Some researchers have suggested that corruption is likely to increase when central government authority declines or fails and that corruption is more prevalent in federal systems.<sup>43</sup> Corruption is likely to be more prevalent at the local level because there is more opportunity and

---

<sup>42</sup> In the United States early research found that this type of competition would appear to have little effect on business location. However, more recent research (for example, Bartik 1985, and Wasylenko and McGuire, 1985) finds that there is some effect.

<sup>43</sup> While not specifically addressing the question of whether fiscal decentralization results in increased corruption, Schleifer and Vishny (1993) argued that rent-seeking activities increase when the role of the central government in society declines.



pressure by local interests, and local officials may have more discretion and fewer obstacles because of the often blurred distinction between politicians and bureaucrats.<sup>44</sup> Treisman (1999, 2000) argues that federal states may be perceived to be more corrupt than unitary states due to three factors: federal states are typically larger than unitary states, implying diminishing returns to reducing corruption; the existence of separate police forces at multiple levels of government; and a higher likelihood of having a bicameral legislature where the upper house is regionally elected and possesses veto power.<sup>45</sup> However, these results appear to be sensitive to the inclusion of other variables and may also suffer from omitted variable bias (Gurgur and Shah, 2000).

In some developing countries there is a widespread belief that corruption is deeply ingrained in local government institutions.<sup>46</sup> Corrupt behavior on the part of local officials, of course, reduces the potential benefits of fiscal decentralization. Corrupt behavior would also reduce private incomes (as citizens must pay bribes to receive public services for which they have already paid taxes) and increase income inequality (as the tax structure is modified to favor those who have sufficient resources to influence government officials).

But several counter arguments have been made to this proposition. Decentralization may reduce opportunities for corruption since local policymakers are more visible to their constituents and thus corrupt behavior is more likely to be noticed than at the central level of

---

<sup>44</sup> Prud'homme (1995), Tanzi (1994, 1996), Rose-Ackerman (1997), and Carbarona (2000) have argued that decentralization in developing and transitional economies increases the likelihood of rent-seeking activities by public officials.

<sup>45</sup> See Tanzi (1998) and Shah (2000) for reviews of the literature on the relationship between decentralization and corruption.

<sup>46</sup> Corruption, in fact, takes many forms, from the formal inclusion of exemptions in the tax structure that favor certain segments of society to bribes to tax assessors, kickbacks or other side payments in the awarding of contracts or through political patronage in the appointment of local employees. See World Bank (1997).

government.<sup>47</sup> Corruption is enhanced by the presence of monopoly powers and discretion, and is diminished by the presence of accountability (Klitgaard, 1988). If decentralized governance limits monopoly political power and makes government more accountable to the local constituencies, then decentralization may help reduce corruption. In addition, the potential for the realization of economic rents may be larger in the case of central government policies such as import quotas or tax privileges. The damage inflicted by corruption at the central level can be several orders of magnitude greater than what can be inflicted at the local level due to increased access to resources and capital markets. Local officials have limited powers and budgets. Thus the return to rent-seeking behavior at the local level of government may be small relative to the center.

While the relationship between fiscal decentralization and corruption has been the subject of increased attention in the literature, there has only been limited empirical analysis of this issue. Huther and Shah (1998), in the first empirical study of this issue, found a negative correlation between fiscal decentralization and corruption. Fisman and Gatti (2000) also found empirical evidence to support the argument of a negative relationship but Treisman (2000) finds that corruption is more prevalent in federal states. More recently, Shah (2000), using a cross-section of developed and developing countries, found that decentralization negatively influences corruption and enhances accountability in the public sector. Decentralization, in this study, appears to have a more significant, negative influence on corruption in unitary rather than in federal countries. Further empirical study will be required on the topic of decentralization and corruption and how it may impact economic growth.

Another potential effect of fiscal decentralization, which may affect expenditure efficiency and ultimately affect economic growth, is that local officials, even if they are

---

<sup>47</sup> See Murphy, Libonatti, and Salinardi (1995), Sewell (1996), Guess, Loehr, and Martinez-Vazquez (1997), and Shah (2000).

popularly elected, may be subservient to the needs of the local elites.<sup>48</sup> Local capture creates a series of problems including overstatement of the cost of provision of local public goods, corruption, and diversion of local public goods to non-intended groups.<sup>49</sup> The local elite may also wish to understate the demand for local public goods in order to lower revenue requirements and taxes. If the preferences of the local elites differ significantly from those of the majority of voters, decentralization reduces local expenditure efficiency and eventually retards economic growth. This, of course, assumes that centralized systems can be more responsive to the tastes and preferences of local voters. However, if the central government is itself controlled by a cadre of national elites, then it is possible, as population heterogeneity increases, that decentralization might still deliver a more efficient allocation of resources, especially if local preferences differ significantly from those at the center. In addition, competition among regional interest groups may lower the return to “capture by elites” at the subnational level relative to the central level of government.<sup>50</sup>

In practice, democratic governance, including frequent and open elections, a free press and mass media, and rule of law may serve to prevent local (and national) capture of public resources by a minority elite.<sup>51</sup> Case studies of democratic decentralization in developing and transitional countries suggest that many new constituencies gain representation through public office (Blair, 1998). This suggests that the concern over local elite capturing the allocative efficiency gains may be overstated. In summary, it is not clear whether capture by local elites

---

<sup>48</sup> See, among others, Conyers (1990), Oates (1993), Tanzi (1996), Bardhan and Mookherjee (1998), Martinez-Vazquez and McNab (1998), and Alesina (1999).

<sup>49</sup> See Bardhan and Mookherjee (1998, 1999) and Dethier (1999, 2000).

<sup>50</sup> See Shleifer (1997) for an examination of the effects of capture on economic development in Russia relative to Poland since the beginning of transition.

<sup>51</sup> See, for example, Blair (1998), Martinez-Vazquez and McNab (1998), Burki, Perry, and Dillinger (1999), and Dethier (1999, 2000).

and divergence from local preferences will be more pronounced under decentralized or centralized systems and therefore how fiscal decentralization may indirectly affect economic growth. These questions await empirical research.

## **5. Summary and Conclusions**

The impact of fiscal decentralization on growth is more than an academic question. Whether decentralization affects economic growth has become an important policy issue for developing and transitional countries. This is an issue of importance both for large countries like China and India and also for small countries like the Baltic Countries or those in Central America.

In general, our knowledge of how decentralization affects economic growth is too limited at the present time to allow us to proffer advice. We have seen that the empirical evidence of the correlation between the extent of decentralization and economic growth is mixed and that this empirical evidence may not be entirely reliable because of several potential problems with the methodological approaches followed to derive those tests. On a theoretical level we have also seen that the overall impact of fiscal decentralization on economic growth may be uncertain. In terms of a direct impact, if Oates' (1993) argument is correct, we should expect higher growth associated with decentralization. But this dynamic superiority of decentralized over centralized public expenditures is by no means obvious. We have also seen that there are potentially a multiplicity of indirect effects of decentralization on growth including those through consumer efficiency, producer efficiency, the geographical distribution of resources, macroeconomic stability, corruption, and capture by elites. Through these indirect effects there are forces at work that will link decentralization to higher economic growth but there are others that work in the opposite direction. At the present time, we are not even in a position to capitalize on what we

know with more certainty is a significant determinant of economic growth: capital spending.<sup>52</sup> Currently, we have no knowledge about whether or not decentralized fiscal systems dedicate fewer resources to public investment than centralized ones; nor do we know about differences in the effectiveness or quality of public investment undertaken by different levels of government.<sup>53</sup>

In light of the lack of consistent knowledge on the impact of decentralization on growth, it would seem safe to argue that policy advice and international aid must still focus on improving the design of fiscal decentralization in developing and the transitional economies. Even if we were to find at some later date that decentralization retards economic growth, this effect would need to be weighed against the positive impact of decentralization on the efficient allocation of economic resources and other possible benefits such as democratic governance and enhanced accountability. A contribution of this review, we hope, is to begin to outline a research agenda which may allow us a better understanding of the direct and indirect effects of fiscal decentralization.

---

<sup>52</sup> Capital investment also seems to be a decisive factor in helping the poor (Deininger and Squire, 1996).

<sup>53</sup> To complicate things further, it is not entirely clear that greater public investment/expenditures (as opposed to public consumption expenditures) lead to higher economic growth (Devarajan et al., 1996).

## REFERENCES

- Alesina, Alberto. 1999. "Too Large and Too Small Governments." In Vito Tanzi, Ke-young Chu, and Sanjeev Gupta (eds.) *Economic Policy and Equity*. Washington, D.C.: International Monetary Fund. 216-234.
- Aschauer, David. 1989. "Is Public Expenditure Productive?" *Journal of Monetary Economics* 23: 177-200.
- Bahl, Roy W. 1999. "Implementation Rules for Fiscal Decentralization." *Public Budgeting and Finance* 19 (2): 59-75.
- Bahl, Roy W. and Shyam Nath. 1986. "Public Expenditure Decentralization in Developing Economies." *Government and Policy* 4: 405-18.
- Bahl, Roy W. and Johannes F. Linn. 1992. *Urban Public Finance in Developing Countries*. Oxford: Oxford University Press.
- Bahl, Roy W., Jorge Martinez-Vazquez, and Sally Wallace. 1996. "State and Local Government Choices in Fiscal Redistribution." Research Paper No. 58, Georgia State University Policy Research Center.
- Bardhan, Pranab. 1997. *The Role of Governance in Economic Development. A Political Economy Approach*. Paris: OECD Development Center.
- Bardhan, Pranab and Dilip Mookherjee. 1998. "Expenditure Decentralization and the Delivery of Public Services in Developing Countries." CIDER Paper C 98-104, University of California, Berkeley.
- \_\_\_\_\_. 1999. "Relative Capture of Local and Central Governments. An Essay in the Political Economy of Decentralization." Working Paper, University of California, Berkeley and Boston University.
- Barro, Robert. 1990. "Government Spending in a Simple Model of Endogenous Growth." *Journal of Political Economy* 98: 103-125.
- \_\_\_\_\_. 1999. "Inequality, Growth, and Investment." *NBER Working Paper 7038*. Cambridge: National Bureau of Economic Research.
- Barro, Robert and Xavier Sala-i-Martin. 1995. *Economic Growth*. New York: McGraw-Hill.
- Bartik, Timothy J. 1985. "Business Location Decisions in the United States: Estimates of the Effects of Unionization, Taxes, and Other Characteristics of States." *Journal of Business and Economics Statistics* 3 (1), January, 14-22.

- Bird, Richard M. 1986 "On Measuring Fiscal Centralization and Fiscal Balance in Federal States." *Government and Policy* 4: 384-404.
- \_\_\_\_\_. 1993. "Threading the Fiscal Labyrinth: Some Issues in Fiscal Decentralization." *National Tax Journal* 46: 207-227.
- Bird, Richard M. and Edgard R. Rodriguez. 1999. "Decentralization and poverty alleviation. International experience and the case of the Phillippines." *Public Administration and Development* 19: 299-319.
- Bird, Richard M. and Francois Vaillancourt. 1997. "Fiscal Decentralization in Developing Countries: An Overview and Perspective." Paper prepared for the *International Seminar in Public Economics*, Tokyo, August 1998.
- Birdsall, Nancy, David Ross, and Richard Sabot. 1995. "Inequality and Growth Reconsidered: Lessons from East Asia." *World Bank Economic Review* 9 (3), September, 477-508.
- Blair, Harry. 1988. "Spreading Power to the Periphery: An Assessment of Democratic Local Governance." *USAID Program and Operations Assessment Report No. 21*.
- Boadway, Robin W. and David Wildasin. 1984. *Public Sector Economics 2<sup>nd</sup> Edition*. Boston: Little Brown.
- Break, George. 1967. *Intergovernmental Fiscal Relations in the United States*. Washington DC, The Brookings Institution.
- Brennan, Geoffrey and James Buchanan. 1980. *The Power to Tax: Analytical Foundations of a Fiscal Constitution*. Cambridge: Cambridge University Press.
- Burki, Shahid, Guillermo Perry, and William Dillinger. 1999. "Beyond the Center: Decentralizing the State." *World Bank Latin America and Caribbean Studies*. Washington, D.C: World Bank.
- Carbonara, Emanuela. 2000. "Corruption and Decentralization." *WP 342/83 - Dipartimento di Scienze Economiche, Bologna*.
- Conyers, Diana. 1990. "Centralization and Development Planning: A Comparative Perspective." In P. de Valk and K. Wekwete (eds.), *Decentralizing for Participatory Planning*. Aldershot: Avebury, England.
- Davoodi, Hamid, Danyang Xie and Heng-fu Zou. 1995. "Fiscal Decentralization and Economic Growth in the United States." Mimeo. Policy Research Department. Washington, D.C.: World Bank.
- Davoodi, Hamid and Heng-fu Zou. 1998. "Fiscal Decentralization and Economic Growth: A Cross-Country Study." *Journal of Urban Economics* 43 (2): 244-57.

- De Mello, Luiz R. Jr. 2000. "Fiscal Decentralization and Intergovernmental Fiscal Relations: A Cross-County Analysis." *World Development* 28 (2): 365-380.
- Deininger, Klaus and Lyn Squire. 1996. "Measuring Income Inequality: a New Database." *World Bank Economic Review* 10: 565-591.
- Dethier, Jean-Jacques. 1999. "Governance and Economic Performance: A Survey." *ZEF Discussion Papers on Development Policy*. Bonn: Center for Development Research, Universitat Bonn.
- \_\_\_\_\_. 2000. *Governance, Decentralization, and Reform in China, India, and Russia*. Kluwer Academic Press: Dordrecht, London, and Boston.
- Devarajan, Shantayanan, Vinaya Swaroop and Heng-fu Zou. 1996. "The Composition of Public Expenditures and Economic Growth." *Journal of Monetary Economics* 37: 313-344.
- Diamond, Jack. 1990. "Measuring Efficiency in Government: Techniques and Experience." In Premchand, A (ed). *Government Financial Management: Issues and County Studies*. International Monetary Fund: Washington, D.C., 142-166.
- Dillinger, William. 1994. "Decentralization and its Implication for Urban Service Delivery." *Urban Management Programme Discussion paper No. 16*. Washington, D.C.: World Bank.
- Dollar, David and Aart Kraay. 2000. "Growth is Good for the Poor." Working Paper. Washington, D.C.: World Bank.
- Easterly, William. 2000. "It's been a rough ride, Toto, but I think we're back in Kansas." Working Paper. Washington, D.C.: World Bank.
- Easterly, William and Sergio Rebelo. 1993. "Fiscal Policy and Economic Growth: An Empirical Investigation." *Journal of Monetary Economics* 32: 417-458.
- Ehdaie, Jaber. 1994. "Fiscal Decentralization and the Size of Government." *Policy Research Working Paper 1387*. Washington, D.C.: World Bank.
- Estache, Antonio. 1995. "Decentralization Infrastructure: Advantages and Limitations." *World Bank Discussion Paper 290*. Washington, D.C.: World Bank.
- Feder, Gershon. 1983. "On Exports and Economic Growth." *Journal of Development Economics*, 12 (1-2): 59-73.
- Fischer, Stanley. 1993. "The Role of Macroeconomic Factors in Growth." *Journal of Monetary Economics* 32: 485-512.
- Fisman, Raymond and Roberta Gatti. 2000. "Decentralization and Corruption: Evidence Across Countries." Working Paper. Washington, D.C.: World Bank.



- Forbes, Kristin. 2000. "A Reassessment of the Relationship Between Inequality and Growth." *American Economic Review*, forthcoming.
- Gramlich, Edward. 1987. "Subnational Fiscal Policy." In John Quigley (ed.) *Perspectives on Local Public Finance and Public Policy*. Greenwich: JAI Press. 3-27.
- \_\_\_\_\_. 1993. "A Policymaker's Guide to Fiscal Decentralization." *National Tax Journal* 46 (2): 229-35.
- Grote, Ulrike and Joachim von Braun. 2000. "Does Decentralization Serve the Poor?" Working Paper. Center for Development Research (ZEF-Bonn), University of Bonn, Germany.
- Guess, George M., William Loehr and Jorge Martinez-Vazquez-Vazquez. 1997. "Fiscal Decentralization: A Methodology for Case Studies." *CAER Consulting Assistance on Economic Reform II: Discussion Papers*, no. 3.
- Gupta, Sanjeev, Keiko Honjo, and Marijn Verhoeven. 1997. "The Efficiency of Government Expenditure: Experiences from Africa." *IMF Working Paper WP/97/153*. Washington, D.C.: International Monetary Fund.
- Gurgur, Tugrul and Anwar Shah. 2000. "Localization and Corruption: Panacea or Pandora's Box?" Working Paper. Washington, D.C.: World Bank.
- Huther, Jeff and Anwar Shaw. 1998. "Applying a Simple Measure of Good Governance to the Debate on Fiscal Decentralization." *World Bank Policy Research Working Papers*, no. 1894.
- Kee, Woo Sik. 1977. "Fiscal Decentralization and Economic Development." *Public Finance Quarterly* 5 (1): 79-97.
- Kirman, Alan. 1992. "Whom or What Does the Representative Individual Represent?" *Journal of Economic Perspectives* 6 (2): 117-36.
- Klitgaard, Robert. 1988. *Controlling Corruption*. Berkeley: University of California Press.
- Levine, Ross and David Renelt. 1992. "A Sensitivity Analysis of Cross-Country Growth Regressions." *American Economic Review* 82 (4): 942-963.
- Lin, Justin Yifu and Zhiqiang Liu. 2000. "Fiscal Decentralization and Economic Growth in China." *Economic Development and Cultural Change* 49 (1): 1-22.
- Litvack, Jennie. 1994. "Regional Demands and Fiscal Federalism." In Wallich, Christine, ed. *Russia and the Challenge of Fiscal Federalism*. Washington, D.C.: World Bank: 218-40.
- Litvack, Jennie, Junaid Ahmad, and Richard Bird. 1998. "Rethinking Decentralization at the World Bank." World Bank Discussion Paper. Washington, D.C.: World Bank.

- Mankiw, N. Gregory, David Romer, and David N. Weil. 1992. "A Contribution to the Empirics of Economic Growth." *The Quarterly Journal of Economics*, May: 407-437.
- Martinez-Vazquez, Jorge, Charles E. McLure, Jr. and Sally Wallace. 1995. "Subnational Fiscal Decentralization in Ukraine." In Richard M. Bird, Robert D. Ebel and Christine I. Wallich (eds.) *Decentralization of the Soviet State: Intergovernmental Finance in Transition Economies*, Washington D.C.: The World Bank, 321-378.
- Martinez-Vazquez, Jorge, Charles E. McLure, Jr. and Sally Wallace. 1999. *Fiscal Decentralization in Kazakhstan*. Manilla: Asian Development Bank and Oxford University Press.
- Martinez-Vazquez, Jorge and Robert M. McNab. 1998. "Fiscal Decentralization, Economic Growth, and Democratic Governance." *International Studies Program Working Paper*. Atlanta: Andrew Young School of Policy Studies, Georgia State University.
- Mauro, Paolo. 1995. "Corruption and Growth." *The Quarterly Journal of Economics*, August, 691-712.
- Mauro, Paolo. 1996. "The Effects of Corruption on Growth, Investment, and Government Expenditure." *IMF Working Paper 96/98*. Washington, D.C.: International Monetary Fund.
- McLure, Charles E. Jr. 1995. "Comment of Prud'homme." *World Bank Research Observer* 10: 221-226.
- McLure, Charles E., Jr. and Jorge Martinez-Vazquez. 1997. "Fiscal Decentralization in Vietnam." International Tax and Investment Center, Washington D.C. and the Asian Development Bank, Manila.
- McNab, Robert and Robert Moore. 1998. "Trade Policy, Export Expansion, Human Capital, and Growth." *Journal of International Trade and Economic Development* 7 (2): 237-256.
- Murphy, Richard Lopez, Oscar Libonatti, and Mario Salinardi. 1995. "Overview and Comparison of Fiscal Decentralization Experiences." In Richard Lopez Murphy (ed.), *Fiscal Decentralization in Latin America*. Washington, D.C.: Inter-American Development Bank: 1 - 57.
- Musgrave, Richard. 1959. *The Theory of Public Finance*. New York: McGraw-Hill.
- Oates, Wallace E. 1972. *Fiscal Federalism*. New York: Harcourt Brace Jovanovich.
- \_\_\_\_\_. 1990. "Decentralization of the Public Sector: An Overview." In Robert Bennett (ed.) *Decentralization, Local Governments and Markets: Toward a Post Welfare Agenda*. Oxford: Clarendon Press.

- \_\_\_\_\_. 1991. "Fiscal Federalism: Overview." In Remy Prud'homme (ed.). 1991. *Public Finance with Several levels of Government: Proceedings of the 46th Congress of the International Institute of Public Finance*. The Hague: Foundation Journal Public Finance: 1-18.
- \_\_\_\_\_. 1993. "Fiscal Decentralization and Economic Development." *National Tax Journal* 46, (2): 237-243.
- Panizza, Ugo. 1998. "Politics and Macroeconomic Institutions: A Study of the Determinants of Fiscal Centralization and the Links between Income Distribution and Long-Run Growth." Johns Hopkins University, Ph.D. Dissertation.
- Perotti, Roberto. 1996. "Growth, Income Distribution, and Democracy: What the Data Say." *Journal of Economic Growth* 1: 149-187.
- Persson, Torsten and Guido Tabellini. 1994. "Is Inequality Harmful to Growth?" *American Economic Review* 84 (3), June, 600-621.
- Peterson, George E. 1996. "Decentralization in Latin America: Learning Through Experience." Washington, D.C.: World Bank.
- Pommerehne, Werner W. 1977. "Quantitative Aspects of Federalism: A Study of Six Countries." in Wallace Oates, ed. *The Political Economy of Fiscal Federalism*, Lexington, Mass.: D.C. Heath, 275-355.
- Prud'homme, Remy. 1991. *Public Finance with Several Levels of Government: Proceedings of the 46th Congress of the International Institute of Public Finance*. The Hague: Foundation Journal Public Finance.
- \_\_\_\_\_. 1995. "On the Dangers of Decentralization." *World Bank Economic Review* 9.
- Ram, Rati. 1986. "Government Size and Economic Growth: A New Framework and Some Evidence from Cross-Section and Time-Series Data." *American Economic Review* (79): 191-203.
- Rondinelli, Dennis A. and John R. Nellis. 1986. "Assessing Decentralization Policies in Developing Countries: A Case for Cautious Optimism." *Development Policy Review* 4 (1): 3-23.
- Rose-Ackerman, Susan. 1997. "Corruption and Development." *Proceedings of the Annual Bank Conference on Development Economics*. Washington, D.C.: World Bank.
- Rubinfeld, Daniel. 1987. "The Economics of the Local Public Sector." In Alan Auerbach and Martin Feldstein (eds.) *Handbook of Public Economics*, Volume 2. Amsterdam: North Holland.

- Salmon, Pierre. 1987. "Decentralizations as an Incentive Scheme." *Oxford Review of Economic Policy* 3 (2): 24-43.
- Sewell, David. 1996. "The Dangers of Decentralization According to Prud'homme: Some Further Aspects." *World Bank Research Observer* 11: 143-50.
- Shah, Anwar. 1994. "The Reform of Intergovernmental Fiscal Relations in Developing and Emerging Market Economies." *Policy Research Series* 23. Washington D.C.: World Bank.
- \_\_\_\_\_. 1999. "Fiscal Federalism and Macroeconomic Governance: for Better or for Worse?" *Fiscal Decentralization in Emerging Countries: Governance Issues*, K. Fukasaku and L.R. De Mello, Jr. (eds.), 37-54. Paris: Organization for Economic Cooperation and Development.
- Shannon, John. 1997. "Middle-of-the-Road Federalism." *National Tax Association Forum*, 28, August.
- Shleifer, Andrei. 1997. "Government in transition." *European Economic Review* 41: 385-410.
- Shleifer, Andrei and Robert Vishny. 1993. "Corruption." *Quarterly Journal of Economics* (109): 599-617.
- Solow, Robert M. 1956. "A Contribution to the Theory of Economic Growth." *Quarterly Journal of Economics* (70): 65-94.
- Spahn, Peter. 1997. "Decentralized Government and Macroeconomic Control." *Infrastructure Notes FM-12*. Washington, D.C.: World Bank.
- Srinivasan, T.N. 2000. "Growth, Poverty Reduction, and Inequality." Working Paper, Department of Economics, Yale University.
- Strumpf, K Coleman. 1999. "Does Government Decentralization Increase Policy Innovation." Working Paper. Department of Economics, University of North Carolina at Chapel Hill.
- Taillant, J. Daniel. 1994. "Decentralization : Local and Regional Government Development. A Literature Review" mimeo, LATPS, World Bank, Washington, D.C.
- Tanzi, Vito. 1994. "Corruption, Governmental Activities and Markets." *IMF Working Paper 94/99*. Washington, D.C.: International Monetary Fund.
- \_\_\_\_\_. 1996. "Fiscal Federalism and Decentralization : A Review of Some Efficiency and Macroeconomic Aspects." *Annual World Bank Conference on Development Economics*, M. Bruno and B. Pleskovic (eds.), 295-316. Washington D.C.: World Bank.
- \_\_\_\_\_. 1998. "Corruption Around the World: Causes, Consequences, Scope, and Cures." *IMF Staff Papers*, 45 (4), 559-594.

- \_\_\_\_\_. 2000. "On Fiscal Federalism: Issues to Worry About." Working Paper. Washington, D.C.: International Monetary Fund.
- Ter-Minasian, Teresa (ed.). 1997. *Fiscal Federalism in Theory and Practice*. Washington, D.C.: The World Bank.
- Tiebout, Charles. 1956. "A Pure Theory of Local Expenditures." *Journal of Political Economy*, 64, October, 416-24.
- Treisman, Daniel. 1999. "Decentralization and Corruption: Why are Federal States perceived to be more corrupt?" Department of Political Science, University of California, Los Angeles, Working Paper.
- Treisman, Daniel. 2000. "Decentralization and the Quality of Government." Department of Political Science, University of California, Los Angeles, Working Paper.
- Wallis, John J. and Wallace E. Oates. 1988. "Does Economic Sclerosis Set in with Age? An Empirical Study of the Olson Hypothesis." *Kyklos*, 41 (3), 397-417.
- Wasylenko, Michael. 1987. "Fiscal Decentralization and Economic Development." *Public Budgeting and Finance* 7: 57-71.
- Wasylenko, Michael and Therese McGuire. 1985. "Jobs and Taxes: The Effect of Business Climate on States' Employment Growth Rates." *National Tax Journal*, 38 (4), December, 497-511.
- Woller, Gary M. and Kerk Phillips. 1998. "Fiscal Decentralization and LDC Economic Growth: An Empirical Investigation." *Journal of Development Studies* 34 (4): 139-148.
- World Bank. 1997. *World Development Report*. Washington, D.C.: World Bank.
- \_\_\_\_\_. 1999. *World Development Report*. Washington, D.C.: World Bank.
- Zhang, Tao and Heng-fu Zou. 1997. "Fiscal Decentralization, the Composition of Public Spending, and Regional Growth in India." *Development Research Group Working Paper*. Washington, D.C.: World Bank.
- Zhang, Tao and Heng-fu Zou. 1998. "Fiscal Decentralization, Public Spending and Economic Growth in China." *Journal of Public Economics* 67 (2): 221-40.